Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2397	((568/591) or (568/678) or (568/679) or (568/698) or (585/639) or (585/640)).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2005/06/25 19:33
L2	6475	alcohol and supercritical	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 19:33
L3	22	l1 and l2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:21
L4	784	dehydration and supercritical	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:29
L5	401575	alcohol and ether	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:22
L6	235	l4 and l5	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:23
L7	208777	sulfonic near2 acid	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:23
L8	42	l6 and l7	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:28
L9	870157	ether or acetal or ketal or alkene	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:38

L10	477	l4 and l9	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:28
L11	44	l7 and l10	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:29
L12	2	l11 not l8	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:29
L13	87	dehydration same supercritical	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:29
L14	1052	(ether or acetal or ketal or alkene) same supercritical	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:38
L15	988016	alcohol or (hydroxy! near5 compound)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:39
L16	803	l14 and l15	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:40
L17	708	acid and l16	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:40
L18	731801	zeolite or (metal adj oxide) or molecular adj sieve or clay or (sulfonic adj acid)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:41
L19	382	l17 and l18	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:58

L20	44639	poliakoff.in. or gray.in. or swan.in. or ross.in. or wieland.in. or roeder.in.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 20:59
L21	2	l4 and l20	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 21:00
L22	3057	l9 and l20	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 21:00
L23	36	supercritical and l22	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/06/25 21:00

09/914,699

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=> s dehydration and supercritical
         94738 DEHYDRATION
         21728 SUPERCRITICAL
L1         105 DEHYDRATION AND SUPERCRITICAL

=> d 1-105 ti

L1   ANSWER 1 OF 105  CAPLUS  COPYRIGHT 2005 ACS on STN
TI   Decomposition behavior of cellulose in supercritical water,
     subcritical water, and their combined treatments

L1   ANSWER 2 OF 105  CAPLUS  COPYRIGHT 2005 ACS on STN
TI   Dehydration reaction and hydration reaction of organic compounds
     in supercritical or subcritical water containing carbon dioxide

L1   ANSWER 3 OF 105  CAPLUS  COPYRIGHT 2005 ACS on STN
TI   Process for producing levoglucosan

L1   ANSWER 4 OF 105  CAPLUS  COPYRIGHT 2005 ACS on STN
TI   Experimental determination of MoO3 and WO3 solubilities in
     supercritical fluids

L1   ANSWER 5 OF 105  CAPLUS  COPYRIGHT 2005 ACS on STN
TI   Influence of sodium sulfate on dehydration of polyols in
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near-critical and **supercritical** water

L1 ANSWER 6 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Progressive and invasive functionalization of carbon nanotube sidewalls by diluted nitric acid under **supercritical** conditions

L1 ANSWER 7 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI A one-step production of fine chemicals using **supercritical** water: an environmental benign application to the synthesis of monoterpene alcohol

L1 ANSWER 8 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Continuous preparation of barium hexaferrite by **supercritical** water crystallization

L1 ANSWER 9 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Kinetics and thermodynamics of 2-propanol **dehydration** in **supercritical** water

L1 ANSWER 10 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Inorganic materials (metals, ceramics, glasses) under the influence of reactants in **supercritical** aqueous solutions as well as chemical reactions (partial oxidations, hydrolysis, dehydrations) under the influence of inorganic materials in **supercritical** aqueous solutions

L1 ANSWER 11 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Catalytic **dehydration** of glycerin to acrolein in near- and **supercritical** water

L1 ANSWER 12 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Characterisation of nimesulide-betacyclodextrins systems prepared by **supercritical** fluid impregnation

L1 ANSWER 13 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Characterization of barium hexaferrite produced by varying the reaction parameters at the mixing-points in a **supercritical** water crystallization process

L1 ANSWER 14 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Measurement of the rate of retro-aldol condensation of D-xylose in subcritical and **supercritical** water

L1 ANSWER 15 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Control of reversible reactions in **supercritical** water: I. Alkylations

L1 ANSWER 16 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Measurement and Modeling of Gas Solubility and Literature Review of the Properties for the Carbon Dioxide-Water System

L1 ANSWER 17 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Extraction of carotenoids from Citrus unshiu press cake by **supercritical** carbon dioxide

L1 ANSWER 18 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Conversions of some small organic compounds with metal oxides in **supercritical** water at 673 K

L1 ANSWER 19 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Lipase-catalyzed synthesis of polyesters from anhydride derivatives involving **dehydration**

L1 ANSWER 20 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Rapid and selective production of valuable chemical intermediates from cellulose using **supercritical** water

L1 ANSWER 21 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI The partial oxidation of isobutene in sub- and **supercritical** water

L1 ANSWER 22 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI The influence of the density of **supercritical** water on the rate constant for the **dehydration** of isopropanol

L1 ANSWER 23 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI **Dehydration** of fructose to 5-hydroxymethylfurfural in sub- and **supercritical** acetone

L1 ANSWER 24 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Texture and nanostructure of chromia aerogels prepared by urea-assisted homogeneous precipitation and low-temperature **supercritical** drying

L1 ANSWER 25 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Porous coordination-polymer crystals with gated channels specific for **supercritical** gases

L1 ANSWER 26 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Method for modification of solid in **supercritical** fluid.

L1 ANSWER 27 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Relaxation of the structure of simple metal ion complexes in aqueous solutions at up to **supercritical** conditions

L1 ANSWER 28 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI **Supercritical** CO2 fluid extraction of crystal water from trehalose dihydrate. Efficient production of form II (Tα) phase

L1 ANSWER 29 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Effect of **supercritical** drying on structure and activity of Mn-substituted hexaaluminate catalyst for methane combustion

L1 ANSWER 30 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Method of conduction of chemical reactions in **supercritical** fluids (versions) and method of creation of local regular seals

L1 ANSWER 31 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI A theoretical study on decomposition of formic acid in sub- and **supercritical** water

L1 ANSWER 32 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Production of metal or metal compound particles by combination of hydrothermal process and RESS (rapid expansion of **supercritical** solution), and apparatus for it

L1 ANSWER 33 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Structure, dynamics and reaction of **supercritical** water

L1 ANSWER 34 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Rapid and selective retro-aldol condensation of glucose to glycolaldehyde in **supercritical** water

L1 ANSWER 35 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN

TI Reaction kinetics of 2-propanol **dehydration** in **supercritical** water

L1 ANSWER 36 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Ortho-Selective Alkylation of Phenol with 2-Propanol without Catalyst in **Supercritical** Water

L1 ANSWER 37 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Noncatalytic synthetic reactions using **supercritical** water: The implications of the unique reactivities based on the nature of **supercritical** water

L1 ANSWER 38 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Method of treating and dehydrating bone for implantation and resulting bone

L1 ANSWER 39 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Method for removal of water associated with bone while diminishing the dimensional changes associated with lyophilization

L1 ANSWER 40 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI **Supercritical** fluid extraction of borage oil

L1 ANSWER 41 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Reaction mechanism of sugar derivatives in subcritical and **supercritical** water

L1 ANSWER 42 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Synthesis of .vepsiln.-caprolactam from .vepsiln.-caprolactone and ammonia in **supercritical** water

L1 ANSWER 43 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Hydrothermal reaction of 1,5-pentanediol under high pressure

L1 ANSWER 44 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI "**Supercritical** water" density effects on the rate of isopropanol **dehydration**

L1 ANSWER 45 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Basis for a New Procedure To Eliminate Diarrheic Shellfish Toxins from a Contaminated Matrix

L1 ANSWER 46 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Mechanistic Aspects of Methanol Partial Oxidation over Supported Iron Oxide Aerogels

L1 ANSWER 47 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI The production of thin metal oxide films by spray pyrolysis using **supercritical** CO2-assisted aerosolization of aqueous solutions

L1 ANSWER 48 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI The **dehydration** of 1,4-butanediol to tetrahydrofuran in **supercritical** water

L1 ANSWER 49 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Kinetic study of chemical transformation in **supercritical** media of bis(hexafluoroacetylacetonate)copper (II) hydrate

L1 ANSWER 50 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Structural Relationships, Interconversion, and Optical Properties of the Uranyl Iodates, UO2(IO3)2 and UO2(IO3)2(H2O): A Comparison of Reactions under Mild and **Supercritical** Conditions

L1 ANSWER 51 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI **Dehydration** of 1,4-butanediol to tetrahydrofuran in **supercritical** water

L1 ANSWER 52 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI An X-ray absorption spectroscopy study of the pressure and temperature dependence of ZnBr2 aqueous **supercritical** solutions

L1 ANSWER 53 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Nitration of organic compounds in liquid and **supercritical** carbon dioxide for synthesis of energetic materials

L1 ANSWER 54 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Detection of muoniated organic free radicals in **supercritical** water

L1 ANSWER 55 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Influence of stoichiometry and reaction time in the barium hexaferrite synthesis by **supercritical** water crystallization method

L1 ANSWER 56 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Apparatus for decomposition and recovery of polyurethane resin

L1 ANSWER 57 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Material synthesis in **supercritical** water. Specific features of reactions in **supercritical** water and novel processes for organic and inorganic syntheses

L1 ANSWER 58 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI The Continuous Acid-Catalyzed **Dehydration** of Alcohols in **Supercritical** Fluids: A New Approach to the Cleaner Synthesis of Acetals, Ketals, and Ethers with High Selectivity

L1 ANSWER 59 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Chemistry in **supercritical** water

L1 ANSWER 60 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI **Supercritical** CO2 carbonation of cemented radioactive waste-forms. Influence on leachability and structure

L1 ANSWER 61 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI The **dehydration** of 1,4-butanediol to tetrahydrofuran in sub- and **supercritical** water

L1 ANSWER 62 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Glucose and fructose decomposition in subcritical and **supercritical** water: detailed reaction pathway, mechanisms, and kinetics

L1 ANSWER 63 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Formation of aqueous small droplet aerosols assisted by **supercritical** carbon dioxide

L1 ANSWER 64 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Production of fine metal oxide particles in **supercritical** water

L1 ANSWER 65 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Studies on the synthetic potential of **supercritical** water

L1 ANSWER 66 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Organic Chemical Reactions in **Supercritical** Water

L1 ANSWER 67 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Studies on extraction of lycopene. 1. Effect of drying methods on extraction of lycopene in tomato skin with **supercritical** carbon dioxide

L1 ANSWER 68 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI **Supercritical** drying with zeolite for the preparation of silica aerogels

L1 ANSWER 69 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Chemical changes of TCE and PCE in the process of activated carbon adsorption-**supercritical** extraction

L1 ANSWER 70 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Hydration of Bromide Ion in **Supercritical** Water: An X-ray Absorption Fine Structure and Molecular Dynamics Study

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TI Phenol recovery by Bisphenol-A (BPA) tar hydrolysis in **supercritical** water

L1 ANSWER 72 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Activation of silica gel by **supercritical** carbon dioxide

L1 ANSWER 73 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Degradation Kinetics of Dihydroxyacetone and Glyceraldehyde in Subcritical and **Supercritical** Water

L1 ANSWER 74 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI **Supercritical** CO2 extraction of oil and residual proteins from Atlantic mackerel (Scomber scombrus) as affected by moisture content

L1 ANSWER 75 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Kinetics of the Titanium Isopropoxide Decomposition in **Supercritical** Isopropyl Alcohol

L1 ANSWER 76 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Simulation and spectroscopy of solvation in water from ambient to **supercritical** conditions

L1 ANSWER 77 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Effect of sample matrix **dehydration** during **supercritical** fluid extraction on the recoveries of drug residues from fortified chicken liver

L1 ANSWER 78 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI **Dehydration** and crystallization of polynuclear hydroxocerium-yttrium-zirconium complexes in **supercritical** solvents

L1 ANSWER 79 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Study of the sequential conversion of citric to itaconic to methacrylic acid in near-critical and **supercritical** water

L1 ANSWER 80 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Transformations of Cyclohexane Derivatives in **Supercritical** Water

L1 ANSWER 81 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI In situ fiber-optic Raman spectroscopy of organic chemistry in a **supercritical** water reactor

L1 ANSWER 82 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Phase equilibrium study for the separation of ethanol-water solution using subcritical and **supercritical** hydrocarbon solvent extraction

L1 ANSWER 83 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Effect of drying with **supercritical** carbon dioxide on enhancement and modification of polymeric catalysts' activity

L1 ANSWER 84 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Mechanism and kinetics of the acid-catalyzed formation of ethene and diethyl ether from ethanol in **supercritical** water

L1 ANSWER 85 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Mechanism and kinetics of the acid-catalyzed **dehydration** of ethanol in **supercritical** water

L1 ANSWER 86 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Probe interface for **supercritical** fluid chromatography/Fourier transform mass spectrometry

L1 ANSWER 87 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Influence of pressure on the acid-catalyzed rate constant for 1-propanol **dehydration** in **supercritical** water

L1 ANSWER 88 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Kinetic elucidation of the acid-catalyzed mechanism of 1-propanol **dehydration** in **supercritical** water

L1 ANSWER 89 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Formation of acrylic acid from lactic acid in **supercritical** water

L1 ANSWER 90 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Extraction of fat tissue from meat products with **supercritical** carbon dioxide

L1 ANSWER 91 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI **Dehydration** of acetic acid-water mixtures with near critical and **supercritical** fluid solvents

L1 ANSWER 92 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Transformations of lower alcohols in **supercritical** extraction of Uzbek oil shales

L1 ANSWER 93 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Acid-catalyzed **dehydration** of alcohols in **supercritical** water

L1 ANSWER 94 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Pyrolysis of 1,3-butanediol as a model reaction for wood liquefaction in **supercritical** water

L1 ANSWER 95 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Catalyzed and uncatalyzed conversion of cellulose biopolymer model compounds to chemical feedstocks in **supercritical** solvents

L1 ANSWER 96 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI **Dehydration** of carbohydrates in **supercritical** water

L1 ANSWER 97 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Heterolysis and homolysis in **supercritical** water

L1 ANSWER 98 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Heterolysis and homolysis in **supercritical** water

L1 ANSWER 99 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI **Dehydration** of **supercritical** carbon dioxide

L1 ANSWER 100 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Solubility of oxygenated hydrocarbons in **supercritical** carbon dioxide

L1 ANSWER 101 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Extraction with **supercritical** gases and its applications

L1 ANSWER 102 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Autoclave for hydrothermal treatment of sorbents and their **dehydration** under **supercritical** conditions

L1 ANSWER 103 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI The activity of water in **supercritical** fluids: water-carbon dioxide at 600° and 700°C at elevated pressures

L1 ANSWER 104 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Plotting of a dissociation equilibrium diagram for the calcium sulfate dihydrate-calcium sulfate hemihydrate-liquid water system in the **supercritical** temperature range

L1 ANSWER 105 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
TI Phase equilibrium at elevated pressures in ternary systems of ethylene and water with organic liquids. Salting out with a **supercritical** gas

=> d 2,18,35,44,58,66,85,87,88,93 bib ab

L1 ANSWER 2 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:445299 CAPLUS
DN 143:9525
TI **Dehydration** reaction and hydration reaction of organic compounds in **supercritical** or subcritical water containing carbon dioxide
IN Ikushima, Yutaka; Arai, Kunio; Minami, Kimitaka
PA National Institute of Advanced Industrial Science and Technology, Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005132809	A2	20050526	JP 2003-373767	20031031
PRAI	JP 2003-373767		20031031		

AB The tittle reactions do not use acid catalysts such as sulfuric acid, hydrochloric acid, etc., and are performed in a reaction medium which comprises supercrit. or subcrit. water containing ≥ 3 mol% carbon dioxide. The title reactions can be performed in the absence of catalyst. Thus, the **dehydration** reaction of cyclohexanol in water containing 15% carbon dioxide at 380°C gave cyclohexene in 80% yield.

L1 ANSWER 18 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:785375 CAPLUS
DN 141:90807
TI Conversions of some small organic compounds with metal oxides in **supercritical** water at 673 K

AU Watanabe, Masaru; Iida, Toru; Aizawa, Yuichi; Ura, Haruo; Inomata, Hiroshi; Arai, Kunio
CS Research Center of Supercritical Fluid Technology, Tohoku University, Aramaki Aoba-ku, 980-8579, Japan
SO Green Chemistry (2003), 5(5), 539-544
CODEN: GRCHFJ; ISSN: 1463-9262
PB Royal Society of Chemistry
DT Journal
LA English
OS CASREACT 141:90807
AB Reactions of formaldehyde (HCHO), acetic acid (CH3COOH), 2-propanol (2-PrOH), and glucose with some metal oxides (CeO2, MoO3, TiO2, and ZrO2) were conducted in supercrit. water at 673 K and 25-35 MPa, using batch reactors. For the reactions of HCHO, CeO2 and ZrO2 showed basicity, on the other hand, MoO3 and TiO2 were acid catalysts. ZrO2 catalyst promoted bimol. decarboxylation of CH3COOH to form acetone, which indicates that both acid and base sites exist on the surface of ZrO2 in supercrit. water. **Dehydration** of 2-PrOH with formation of propylene was promoted by acid catalyst (H2SO4), while its dehydrogenation with formation of acetone was catalyzed by alkali (NaOH). All the metal oxides that were used in this study promoted **dehydration** of 2-PrOH; namely there are mainly acidic sites for 2-PrOH reactions on the surface of all the metal oxides under the conditions used. Among the metal oxides, ZrO2 and TiO2 (rutile) enhanced the formation of acetone in the case of 2-PrOH reaction. This means there are also basic sites for 2-PrOH on the ZrO2 and TiO2 (rutile). In supercrit. water at 673 K and 15 min, H2 yield from glucose in the acidic atmospheric (namely in the presence of H2SO4) is lower than that in the absence of additive whereas, on the other hand, the H2 yield in the presence of NaOH is twice as much as that in the absence of the additive. With CeO2 and ZrO2, the H2 yield from glucose was almost twice as high as that without catalyst. By adding MoO3 and TiO2, the amount of H2 formation was suppressed. Through this study, we can show the generality of acidity and basicity of the metal oxides for organic reactions in SCW.
RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 35 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:405201 CAPLUS
DN 137:200982
TI Reaction kinetics of 2-propanol **dehydration** in **supercritical** water
AU Anikeev, V. I.; Ermakova, A.; Manion, D.; Hugh, R.
CS Boreskov Institute of Catalysis, Siberian Division, Russian Academy of Sciences, Novosibirsk, 630090, Russia
SO Kinetics and Catalysis (Translation of Kinetika i Kataliz) (2002), 43(2), 189-194
CODEN: KICAA8; ISSN: 0023-1584
PB MAIK Nauka/Interperiodica Publishing
DT Journal
LA English
AB A study of the kinetics and mechanism of chemical reactions in supercrit. fluids is considered. An exptl. procedure was proposed for examining reversible chemical reactions in supercrit. water. The reaction kinetics of 2-propanol **dehydration** in supercrit. water was studied. It was found that the uncatalyzed reactions of olefin hydrogenation by hydrogen dissolved in supercrit. water occur at high rates near the critical point of water. The exptl. data on the **dehydration** of 2-propanol in supercrit. water are adequately described by first-order reaction rate equations. The rate consts. and activation energies of 2-propanol **dehydration** near the critical point of supercrit. water were found.
RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 44 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:909423 CAPLUS
DN 136:231973
TI "**Supercritical** water" density effects on the rate of isopropanol **dehydration**
AU Anikeev, V. I.; Menion, D.; Ermakova, A.
CS Inst. Kitaliza, SO RAN, Novosibirsk, Russia
SO Zhurnal Fizicheskoi Khimii (2001), 75(8), 1387-1393
CODEN: ZFKHA9; ISSN: 0044-4537
PB MAIK Nauka
DT Journal
LA Russian
OS CASREACT 136:231973
AB The **dehydration** of 2-propanol in supercrit. water proceeded via five consecutive-parallel reactions: (1) 2-C3H8O = C3H6 + H2O; (2) C3H6 + H2O = 1-C3H8O; (3) C3H6 + H2 = C3H8; (4) C3H4 + H2O = C3H6O (acetone); (5) 2-C3H8O = C3H6O + H2, with reactions (1), (2), and (5) reversible. Equilibrium constant for reaction (1) and rate consts. for reactions (1)-(5) were determined as functions of d.

L1 ANSWER 58 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:711606 CAPLUS
DN 132:78136
TI The Continuous Acid-Catalyzed **Dehydration** of Alcohols in **Supercritical** Fluids: A New Approach to the Cleaner Synthesis of Acetals, Ketals, and Ethers with High Selectivity
AU Gray, William K.; Smail, Fiona R.; Hitzler, Martin G.; Ross, Stephen K.; Poliakoff, Martyn
CS School of Chemistry, University of Nottingham, University Park Nottingham, NG7 2RD, UK
SO Journal of the American Chemical Society (1999), 121(46), 10711-10718
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
OS CASREACT 132:78136
AB We report a new continuous method for forming ethers, acetals and ketals using solid acid catalysts, DELOXAN ASP or AMBERLYST 15, and supercrit. fluid solvents. In the case of ether formation, we observe a high selectivity for linear alkyl ethers with little rearrangement to give branched ethers. Such rearrangement is common in conventional syntheses. Our approach is effective for a range of n-alcs. up to n-octanol and also for the secondary alc. 2-propanol. In the reaction of phenol with an alkylating agent, the continuous reaction can be tuned to give preferential O- or C-alkylation with up to 49% O-alkylation with supercrit. propene. We also investigate the synthesis of a range of cyclic ethers and show an improved method for the synthesis of THF from 1,4-butanediol under very mild conditions.
RE.CNT 71 THERE ARE 71 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 66 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:8637 CAPLUS
DN 130:167837
TI Organic Chemical Reactions in **Supercritical** Water
AU Savage, Phillip E.
CS Chemical Engineering Department, University of Michigan, Ann Arbor, MI, 48109-2136, USA
SO Chemical Reviews (Washington, D. C.) (1999), 99(2), 603-621

CODEN: CHREAY; ISSN: 0009-2665
PB American Chemical Society
DT Journal; General Review
LA English
AB A review with 171 refs. including hydrogenation/dehydrogenation, C-C bond formation, rearrangements, hydration/**dehydration**, elimination, hydrolysis, oxidation, H-D exchange, and decomposition
RE.CNT 171 THERE ARE 171 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 85 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1991:206280 CAPLUS
DN 114:206280
TI Mechanism and kinetics of the acid-catalyzed **dehydration** of ethanol in **supercritical** water
AU Xu, Xiaodong; De Almeida, Carlos; Antal, Michael J., Jr.
CS Hawaii Nat. Energy Inst., Univ. Hawaii, Manoa, Honolulu, HI, 96822, USA
SO Journal of Supercritical Fluids (1990), 3(4), 228-32
CODEN: JSFLEH; ISSN: 0896-8446
DT Journal
LA English
AB In the presence of a low concentration (<0.01 mol dm-3) of H2SO4, ethanol undergoes rapid and selective **dehydration** to ethene in supercrit. water. The kinetics of this reaction are consistent with an acid-catalyzed E2 mechanism.

L1 ANSWER 87 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1990:97802 CAPLUS
DN 112:97802
TI Influence of pressure on the acid-catalyzed rate constant for 1-propanol **dehydration** in **supercritical** water
AU Narayan, Ravi; Antal, Michael Jerry, Jr.
CS Hawaii Nat. Energy Inst., Univ. Hawaii, Manoa, Honolulu, HI, 96822, USA
SO Journal of the American Chemical Society (1990), 112(5), 1927-31
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA English
AB The acid-catalyzed rate of **dehydration** of 1-propanol (I) in supercrit. water is first-order in I at low reactant concns. Studies of the reaction rate in acidic and buffered solns. lead to values of the pKa of the sulfuric acid catalyst ranging from 2.1 to 1.5 at 375° as pressure increases from 22.1 MPa (Pr = 1.002) to 34.5 MPa (Pr = 1.563). The bisulfate anion dissocs. to a negligible extent in supercrit. water. Because the sulfuric acid is largely dissociated under these conditions, the rate of I disappearance is given by KH[H+][I], which is an example of specific-acid catalysis. These findings are consistent with an acid-catalyzed, concerted E2 **dehydration** mechanism. The measured value of KH is linearly dependent on the reciprocal of the dielec. constant of water.

L1 ANSWER 88 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1990:54603 CAPLUS
DN 112:54603
TI Kinetic elucidation of the acid-catalyzed mechanism of 1-propanol **dehydration** in **supercritical** water
AU Narayan, Ravi; Antal, Michael Jerry, Jr.
CS Dep. Mech. Eng., Univ. Hawaii, Honolulu, HI, 96822, USA
SO ACS Symposium Series (1989), 406(Supercrit. Fluid Sci. Technol.), 226-41
CODEN: ACSMC8; ISSN: 0097-6156
DT Journal
LA English
AB A symposium. The acid-catalyzed **dehydration** of 1- and 2-propanol

was studied in supercrit. water at 375° and 34.5 mPa. The data for 1-propanol **dehydration** are kinetically consistent with the acid catalyzed E2 mechanism.

L1 ANSWER 93 OF 105 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1987:638880 CAPLUS
DN 107:238880
TI Acid-catalyzed **dehydration** of alcohols in **supercritical** water
AU Ramayya, Sundaresh; Brittain, Andrew; DeAlmeida, Carlos; Mok, William; Antal, Michael Jerry, Jr.
CS Renewable Resour. Res. Lab., Univ. Hawaii, Honolulu, HI, 96822, USA
SO Fuel (1987), 66(10), 1364-71
CODEN: FUELAC; ISSN: 0016-2361
DT Journal
LA English
OS CASREACT 107:238880
AB At pressures exceeding its critical pressure water retains its ionic properties to temps. of 400° or more. In water under these conditions trace amts. of Arrhenius acids dissociate and selectively catalyze the **dehydration** of alcs., diols, and polyols. High yields of the desired **dehydration** product (C2H4 from propene from PrOH, acetaldehyde from ethylene glycol, and acrolein from glycerol) can be obtained with a residence time of <1 min. However, for EtOH the equilibrium conversion appears to be less than predicted by ideal solution thermochem. calcns. This may be due to catalyst deactivation, or it may be an effect of H bonding between the water and the reactant alc. The **dehydration** of PrOH proceeds by a 1st-order reversible reaction whose equilibrium is close to that predicted by thermodn.

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